

RHYTIDOSPORA, A NEW CLEISTOCARPOUS GENUS OF THE MELANOSPORACEAE¹

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SUMMARY

Rhytidospora is erected as a new genus in the Melanosporaceae. It is characterized by light coloured cleistothecia with a cephalothecoid peridium and one-celled, dark brown, wrinkled ascospores possessing two germ pores. R. tetraspora sp. nov. is described and photographed from burro dung collected in Venezuela.

INTRODUCTION

During the course of a continuing study of coprophilous fungi, one apparently undescribed cleistocarpous genus was isolated on Leonian's medium (Cain and Farrow, 1956) mixed with powdered burro dung. The taxon is characterized by light orange cleistothecia with a cephalothecoid peridium; globose to subglobose asci; and one-celled, dark brown, wrinkled ascospores possessing two germ pores. Since no other cleistocarpous genus is known with this combination of characteristics, the taxon is described here as a new genus.

TAXONOMY

Rhytidospora Jeng & Cain, gen. nov.

Ascocarpia dispersa, sine stromate nec ostiolo, globosa vel subglobosa, pallide armeniaca, glabra, e peridio membranaceo, pallide armeniaco, cephalothecoideo composita. Asci unitunicati, iodo non caerulescentes, globosi vel subglobosi, irregulariter dispersi, evanescentes. Paraphyses nullae. Ascosporae unicellulares, primum hyalinae, ma-

¹ Supported by grants from the National Research Council of Canada.

turitate confirmata brunneae vel atro-brunneae, parietibus crassis, rugulosae, foramen germinale in utroque apice exhibentes. Conidia incognita.

TYPUS GENERIS: Rhytidospora tetraspora Jeng et Cain

ETYMOLOGY: Greek, rhytido = wrinkle and spora = seed, referring to the wrinkled wall of the ascospores.

Ascocarps scattered, non-stromatic, non-ostiolate, globose to subglobose, light orange, glabrous; peridium membranaceous, light orange, cephalothecoid in surface view. Asci unitunicate, non-amyloid, globose to subglobose, irregularly disposed, evanescent. Paraphyses lacking. Ascospores one-celled, at first hyaline, brown to dark brown at maturity, thick-walled, wrinkled with two germ pores. Conidia unknown.

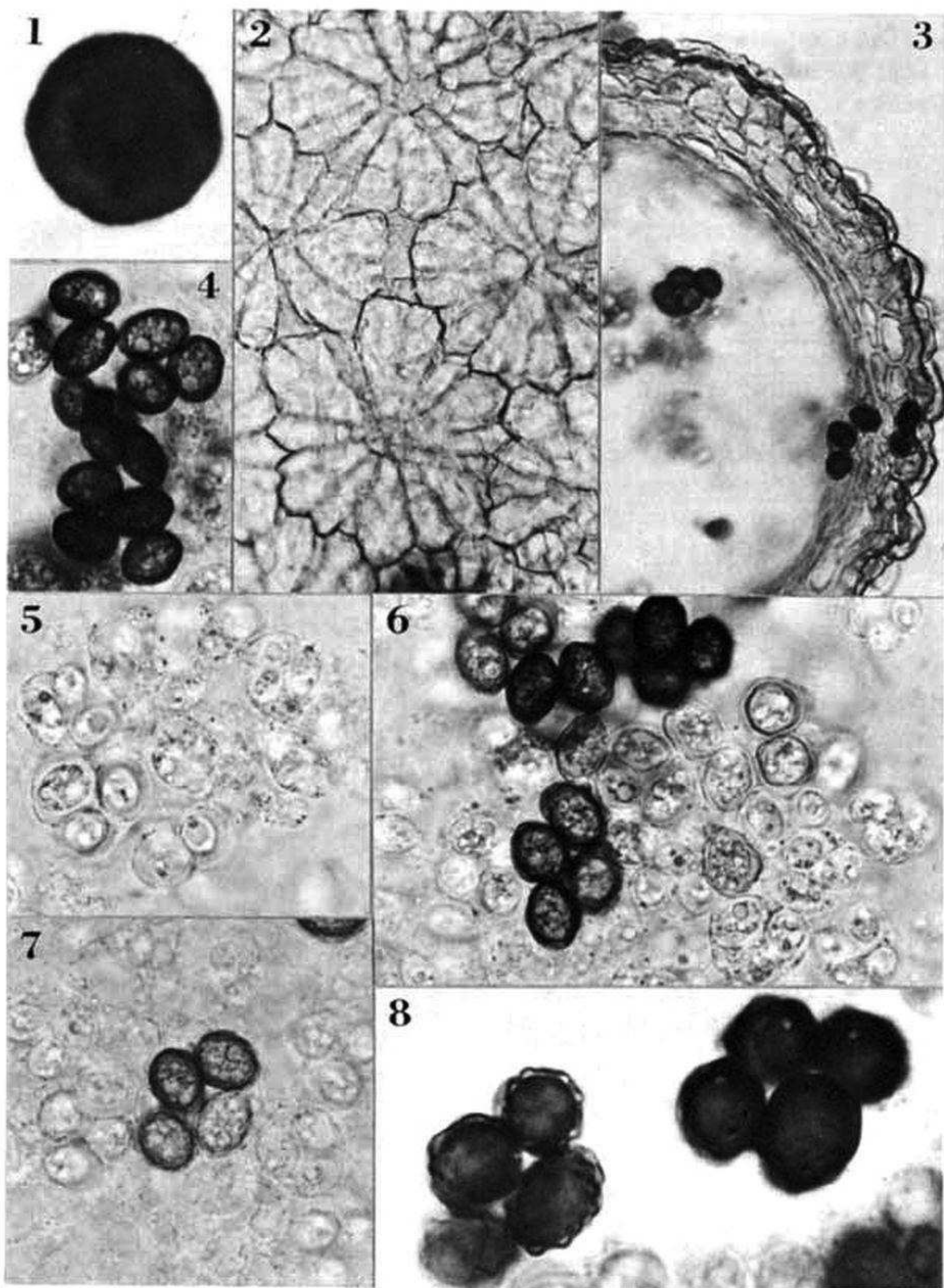
Rhytidospora tetraspora Jeng & Cain, sp. nov. Figs. 1-8.

Ascocarpia dispersa, superficialia, globosa vel subglobosa, 90-150 x 90-135 μm magna, pallide armeniaca, glabra, e peridio membranaceo, translucenti, pallide armeniaco, cephalothecoideo, 30-54 μm crasso, in tribus stratis composita. Asci unitunicati, iodo non caerulescentes, irregulariter dispersi, quadrispori, globosi vel subglobosi, 21-25 x 14-20 μm magni, parietibus tenuibus, evanescentes. Ascosporae unicellulares, ellipsoideae, 10-13 x 7-9 μm magna, primum hyalinae, deinde pallide brunneae vel olivaceo-brunneae, maturitate confirmata atro-brunneae, parietibus crassis, rugulosae, foramen germinale in utroque apice exhibentes. Conidia incognita.

HOLOTYPUS: in equorum fimo lectus est, in calle a Manacal ad Los Pocitos vocato, in loco ab Irapa septentrionali-occidentali remoto, in Sucre pago reipublicae Venezuelensis, 13 Quint. 1972, Dumont, Cain, Samuels, Morillo et Farfan VE-4890y. In Torontoensis universitatis Cryptogamarum herbario.

ETYMOLOGY: Greek, tetra = four and spora = seed, referring to the number of ascospores in the ascus.

Ascocarps scattered, superficial, globose to subglobose, 90-150 x 90-135 μm , light orange, glabrous; peridium 30-54 μm thick, membranaceous, translucent, cephalothecoid in surface view, 3-layered in section, consisting of an outer layer composed of several regular plates of radiating as well as polygonal cells, light orange, one cell wide,



Figs. 1-8. *Rhytidospora tetraspora*. 1. Ascocarp. x150. 2. Peridium in surface view. x275. 3. Longitudinal section of the peridium. x275. 4. Mature ascospores. x615. 5. Young asci and ascospores. x615. 6. Young and mature ascospores. x615. 7. Portion of an ascocarp showing one ascus containing four mature ascospores. x615. 8. Mature ascospores showing the wrinkled spore wall and one of the two germ pores. x 1090.

4.5-7.5 μm thick, with flattened and elongated cells filled with light orange homogenous matrix, a middle layer 21-36 μm thick, with angular, thick-walled, hyaline cells measuring 6-36 x 6-12 μm and an inner layer 9-12 μm thick, with flattened and elongated, hyaline cells measuring 5-18 x 2-3 μm . Asci unitunicate, non-amyloid, irregularly disposed, 4-spored, globose to subglobose, 21-25 x 14-20 μm , thin-walled, evanescent. Paraphyses lacking. Ascospores one-celled, ellipsoidal, 10-13 x 7-9 μm , at first hyaline, ranging in color from light brown to olivaceous brown, dark brown at maturity, thick-walled, wrinkled with a germ pore measuring 1.4-1.7 μm in diameter at each end of the spore. Conidia unknown.

HABITAT: on burro dung.

SPECIMEN EXAMINED: VENEZUELA: Edo. Scure: NW of Irapa, trail between Manacal and Los Pocitos, burro dung, 13 July 1972, Dumont, Cain, Samuels, Morillo and Farfan VE-4890y (TRTC).

In a collection from Mexico (TRTC 36559) the ascospores are of the same magnitude as in R. tetraspora but the original notes indicate that the ascus contained only two spores. In the absence of other diagnostic characters and since the material is very scanty, we feel that a final disposition must await further information based on fresh material.

DISCUSSION

Superficially, R. tetraspora resembles the ostiolate Neocosmospora vasinfecta E.F. Smith (Udagawa, 1963), of the Hypocreaceae, in possessing a light coloured peridium and the ornamentation of the ascospores. It differs primarily in having dark ascospores with very distinct germ pores, features not known in Hypocreaceae.

The cephalothecoid peridium in Rhytidospora is quite interesting in that unlike most forms with this peridium type, it consists of several regularly arranged plates. Each plate is composed of a few small polygonal cells in the center which in turn are surrounded by several large radiating cells, each with thickened end walls. The continuation of these walls results in a permanent dehiscence line in each plate. This is the special mechanism in order to split the ascocarps for discharge of the mature ascospores.

Rhytidospora is more similar to some members of Melanosporaceae rather than Hypocreaceae, for example, Melanospora Corda (Doguet, 1955) and Microthecium Corda (Udagawa and Cain, 1969; Hawksworth and Udagawa, 1977), in possessing light coloured ascocarps and brown to dark brown ascospores with conspicuous terminal germ pores. It is apparent from such criteria that Rhytidospora belongs in the Melanosporaceae but differs from the other genera in its unique peridial structure and the characteristic ascospore ornamentation.

As pointed by Cain (1956), the production of globose to subglobose, evanescent asci and their irregular disposed arrangement within the ascocarp peridium, the absence of paraphyses; and the presence of peridial plates provides a typical example of progressive evolution from an ostiolate form. R. tetraspora may represent another example of this principle.

ACKNOWLEDGMENT

We wish to express our appreciation to Dr. J.C. Krug for preparing the Latin diagnoses and revising the manuscript.

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